

Patent Claims

1.-9. (canceled)

10. (new) A process for producing single-crystal structures from metallic superalloys, comprising:

providing a substrate with a single-crystal structure from an epitaxial growth of a layer material via a first material application process;

applying an intermediate layer where no single-crystal or directional structure occurs on the substrate; and

epitaxially growing the layer material on the intermediate layer.

11. (new) The process as claimed in claim 10, wherein the structure is a component, a workpiece, a blade, or a vane.

12. (new) The process as claimed in claim 10, wherein the substrate has a plurality of single-crystal structures from the epitaxial growth of the layer material.

13. (new) The process as claimed in claim 10, wherein a heat treatment transforms at least part of the intermediate layer with the substrate into a region having a crystalline structure.

14. (new) The process as claimed in claim 10, wherein a heat treatment transforms at least part of the intermediate layer with the layer material into a region having a crystalline structure.

15. (new) The process as claimed in claim 10, wherein the intermediate layer is generated electrochemically.

16. (new) The process as claimed in claim 10, wherein the intermediate layer is applied with a non-directional microstructure.

17. (new) The process as claimed in claim 10, wherein the intermediate layer is applied with a directional microstructure.

18. (new) The process as claimed in claim 10, wherein the intermediate layer is applied via a second material application process.
19. (new) The process as claimed in claim 10, wherein a composition ratio of constituents for the intermediate layer is adapted to a main composition ratio of main constituents of the substrate.
20. (new) The process as claimed in claim 10, wherein a material composition of the intermediate layer at least approximately corresponds to the material composition of the substrate.
21. (new) A component formed from a metallic superalloy, comprising:
a substrate having at least partially single-crystal structures;
an intermediate layer having no single-crystal or directional structure in the substrate; and
a layer material with a single-crystal structure is present on the intermediate layer.
22. (new) The component as claimed in claim 21, wherein a composition of the layer material at least approximately corresponds to a material composition of the substrate.
23. (new) The process as claimed in claim 21, wherein the intermediate layer is generated electrochemically.